One-page Teacher Guide

1. **Assess to find point-of-need first:** Use the **Fluency Interview** (downloadable for free from www.toptenresources.com/fluency) to work out at which skill each student should begin from at the start of the year (before you start whole-class). Each year, pass this data along (using the whole-school tracker spreadsheet) to avoid needing to repeat the entire interview, and simply commence it at the next question.

2. **5 minute morning/afternoon routine only: This is a 5-minute daily routine (ideally the first routine of the morning, or a final routine of the afternoon before students go home) separate to the main hands-on maths lesson each day.**

   Note: ***Ideally, the main maths lesson every day is a real-life linked, hands-on, materials-based task involving understanding, reasoning and problem-solving (not procedural, algorithmic or speed/fluency focused).*** Our hands-on, sequential numeracy units (free samples at https://www.toptenresources.com/earlyyears and https://www.toptenresources.com/years3-6) have been developed for over a decade in Australian classrooms by numeracy coaches to support teachers with the huge task of planning these types of tasks.

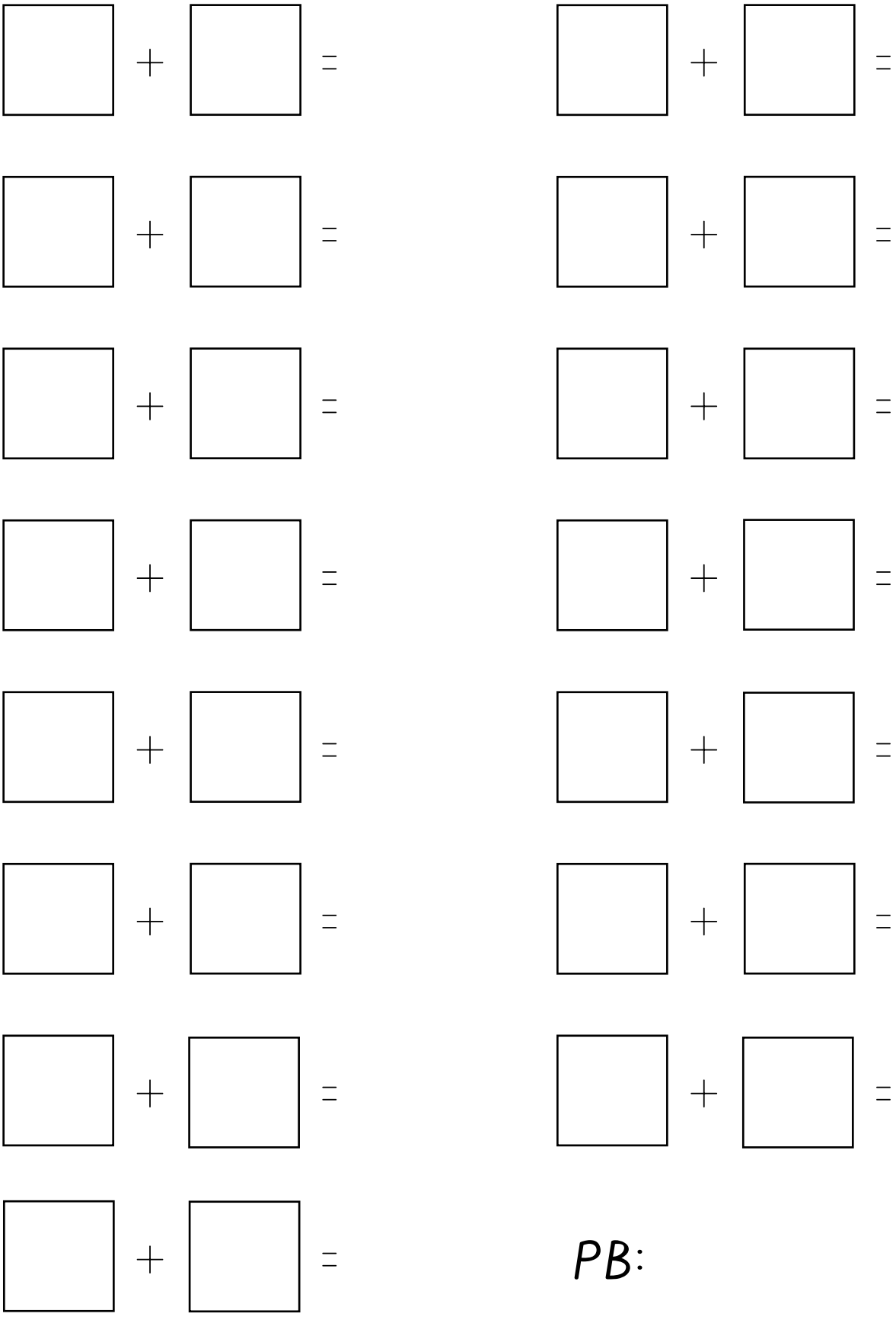
   Fluency is not worth any more than 5 minutes of students' time per day, and students should not be working on a sheet for more than 5 minutes per day.

3. **15 in 5:** When a student completes 15 problems (the entire sheet) for three days in a row within the 5-minute timeframe (therefore averaging 20 seconds or less per problem), they are considered fluent in that skill and can progress to the next skill.

4. **Write and wipe:** We recommend using write-and-wipe boards to reduce printing and teacher workload.

5. **Immediate feedback for students with peer correction using a calculator:** Students can swap and correct with calculators for *Skill 21* onwards. If some students are not up to Skill 21 yet, organise swaps for peer correction amongst students who are up to that skill and beyond, or students can correct their own work with a calculator and teacher 'glance-check' afterwards.

Pull a domino and add both sides. *Use what you know about all the ways to make 3, 4, 5, 6, 7, 8 and 9 from ninja number sliders.*



PB:

Skip-count by 10 and 5 from zero.

Skip-count by 10

0
10

Skip-count by 5

0	5
10	

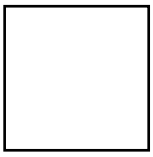
Skip-count by 2 from zero.

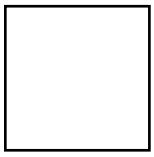
Skip-count by 2:

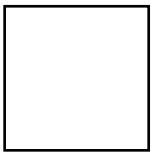
0	2	4		

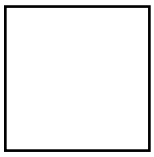
Roll a 20-sided die and work out one less.

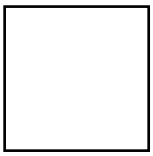
Think one back

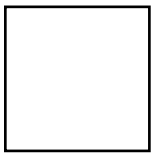
 - 1 =

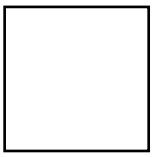
 - 1 =

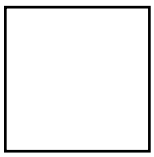
 - 1 =

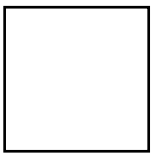
 - 1 =

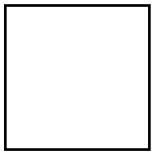
 one back =

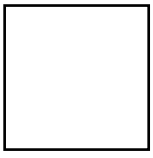
 one back =

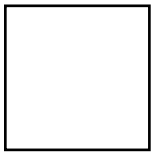
 one less =

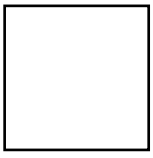
 one less =

 one less =

 one less =

 one fewer =

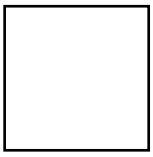
 one fewer =

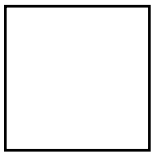
 one fewer =

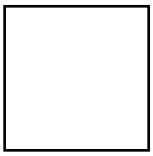
PB:

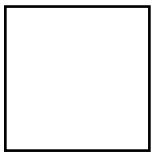
Roll a 20-sided die and work out two less.

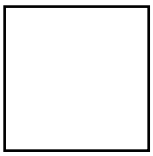
Think two back

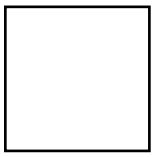
 - 2 =

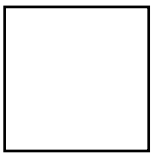
 - 2 =

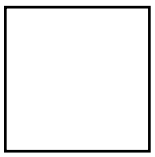
 - 2 =

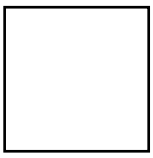
 - 2 =

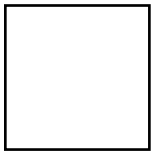
 two back =

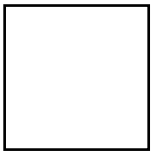
 two back =

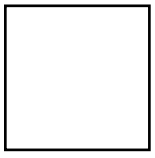
 two less =

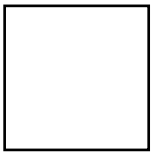
 two less =

 two less =

 two less =

 two fewer =

 two fewer =

 two fewer =

PB:

Roll two 10-sided dice to make a two-digit number,
then work out one more.

Think one more

☐ + 1 =	☐ + 1 =
☐ + 1 =	☐ + 1 =
☐ one more =	☐ one more =
☐ one more =	☐ one more =
☐ one more =	☐ one more =
☐ one greater =	☐ one greater =
☐ one greater =	PB:

Roll <u>two</u> 10-sided dice <u>to make a two-digit number</u>,
then work out two more.

Think two more

☐ + 2 =	☐ + 2 =
☐ + 2 =	☐ + 2 =
☐ two more =	☐ two more =
☐ two more =	☐ two more =
☐ two more =	☐ two more =
☐ two greater =	☐ two greater =
☐ two greater =	PB:

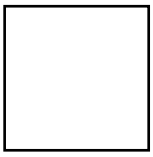
Roll <u>two</u> 10-sided dice <u>to make a two-digit number</u>,
then work out one less.

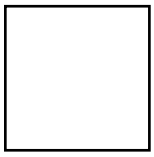
Think one back

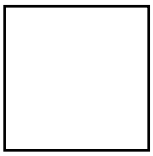
☐ − 1 =	☐ − 1 =
☐ − 1 =	☐ − 1 =
☐ one back =	☐ one back =
☐ one less =	☐ one less =
☐ one less =	☐ one less =
☐ one fewer =	☐ one fewer =
☐ one fewer =	PB:

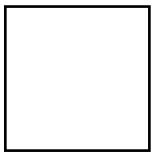
Roll <u>two</u> 10-sided dice <u>to make a two-digit number</u>,
then work out two less.

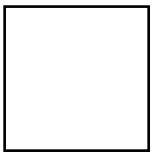
Think two back

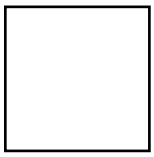
 - 2 =

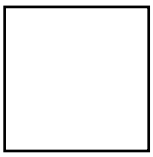
 - 2 =

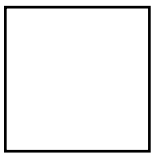
 - 2 =

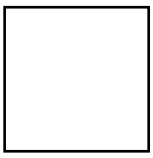
 - 2 =

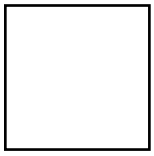
 two back =

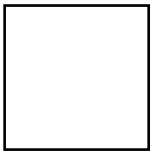
 two back =

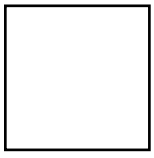
 two less =

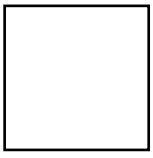
 two less =

 two less =

 two less =

 two fewer =

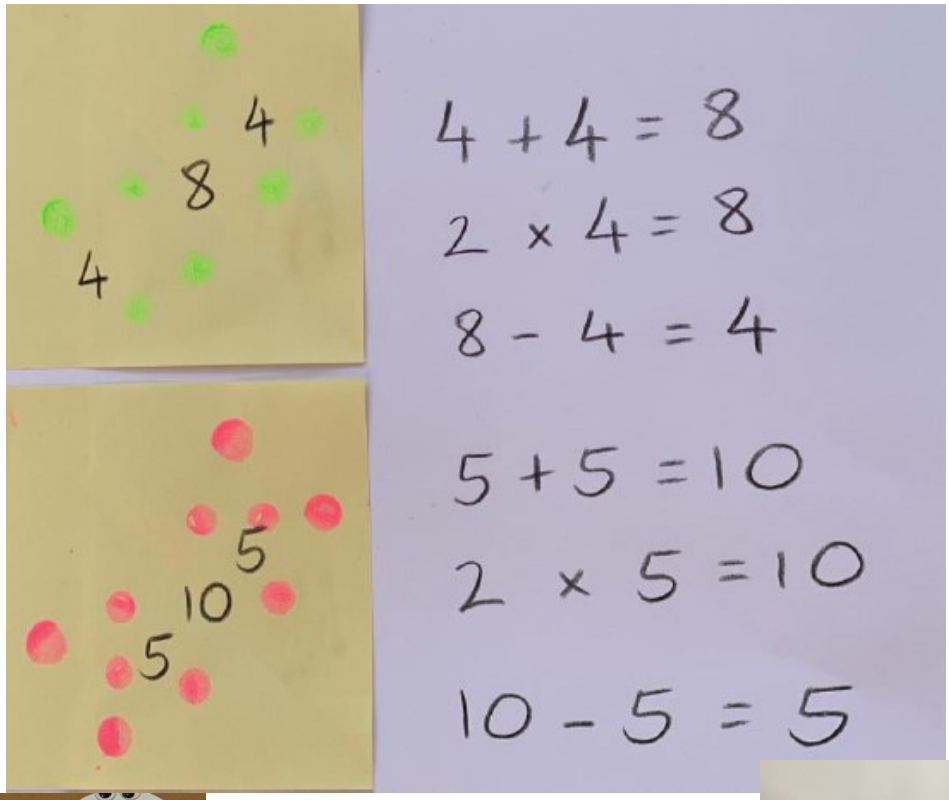
 two fewer =

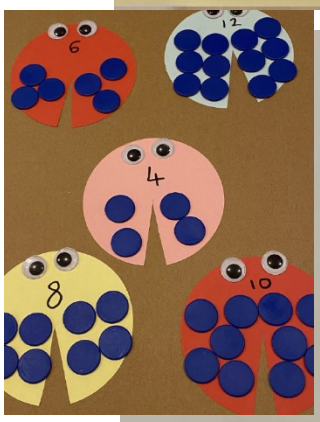
 two fewer =

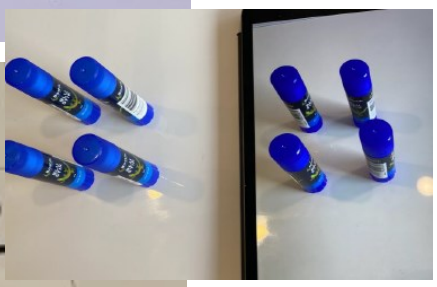
PB:

Initial support for the doubles strategy, using doubles dot paintings, doubles flipbooks, mirrors or iPad photos to double objects, ladybirds and much more!

See Early Years *Addition Unit 6*







Roll a 10-sided die and double the number.

Double it!

	+	same number	=		× 2	=
	+	same number	=		× 2	=
	+	same number	=		× 2	=
	+	same number	=		× 2	=
	+	same number	=		× 2	=
	+	same number	=		× 2	=
	+	same number	=	PB:		

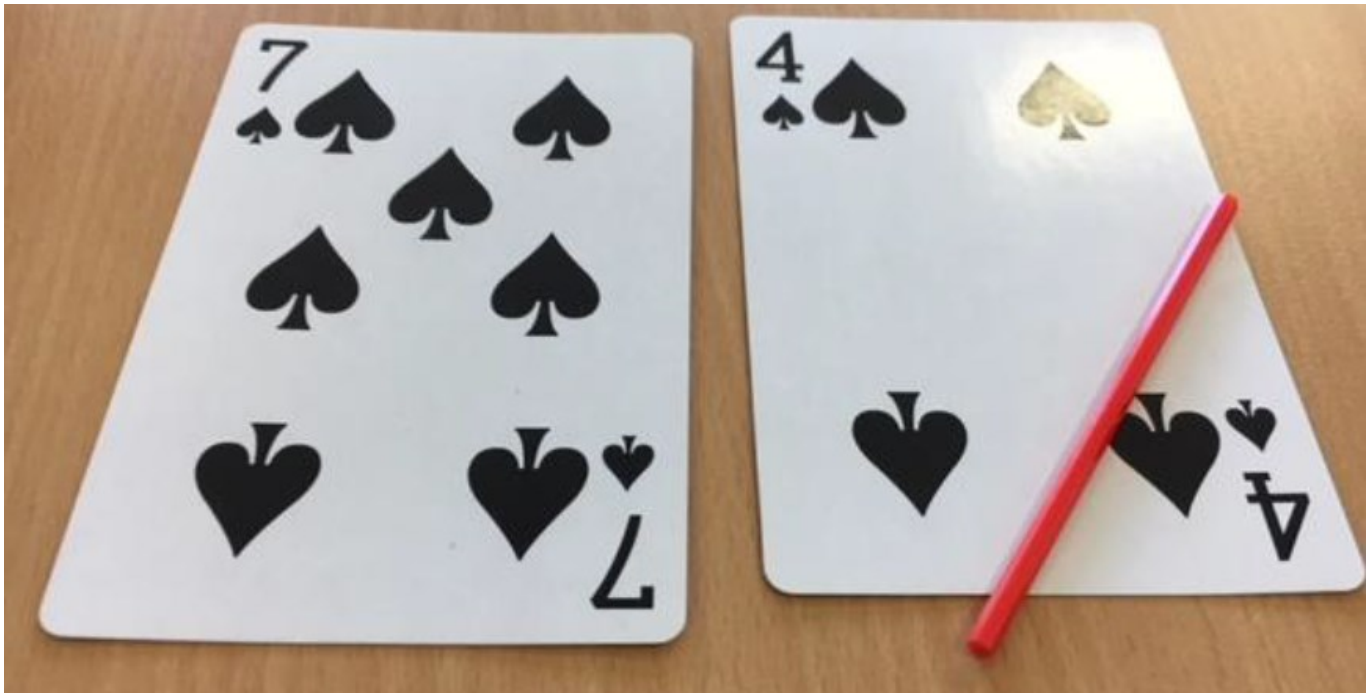
Roll a 10-sided die, write down that number. Then write a number that is one less/more than it. Work out the addition.

Double and one or two more/less.

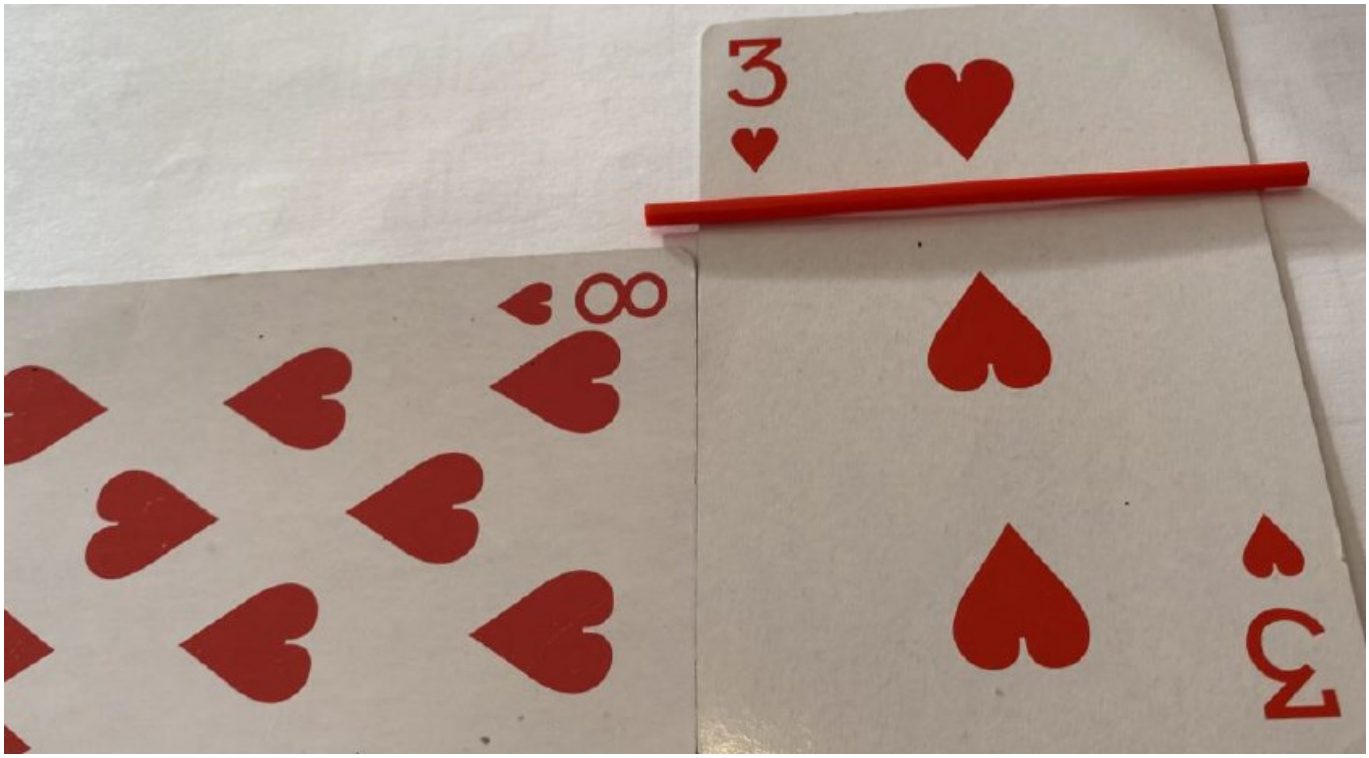
	+	one more than number rolled	=		
	+	one more than number rolled	=		
	+	one more than number rolled	=		
	+	one more than number rolled	=		
	+	two more than number rolled	=		
	+	two more than number rolled	=		
	+	two more than number rolled	=		
	+	two more than number rolled	=		
	+				
	+	one less than number rolled	=		
	+	one less than number rolled	=		
	+	one less than number rolled	=		
	+	one less than number rolled	=		
	+	two less than number rolled	=		
	+	two less than number rolled	=		
	+	two less than number rolled	=		
	+			PB:	

Initial support for the build/bridge to 10 strategy using a partitioning stick on the playing cards, like so:

Use the stick to ‘mark’ a ten, then add the rest.



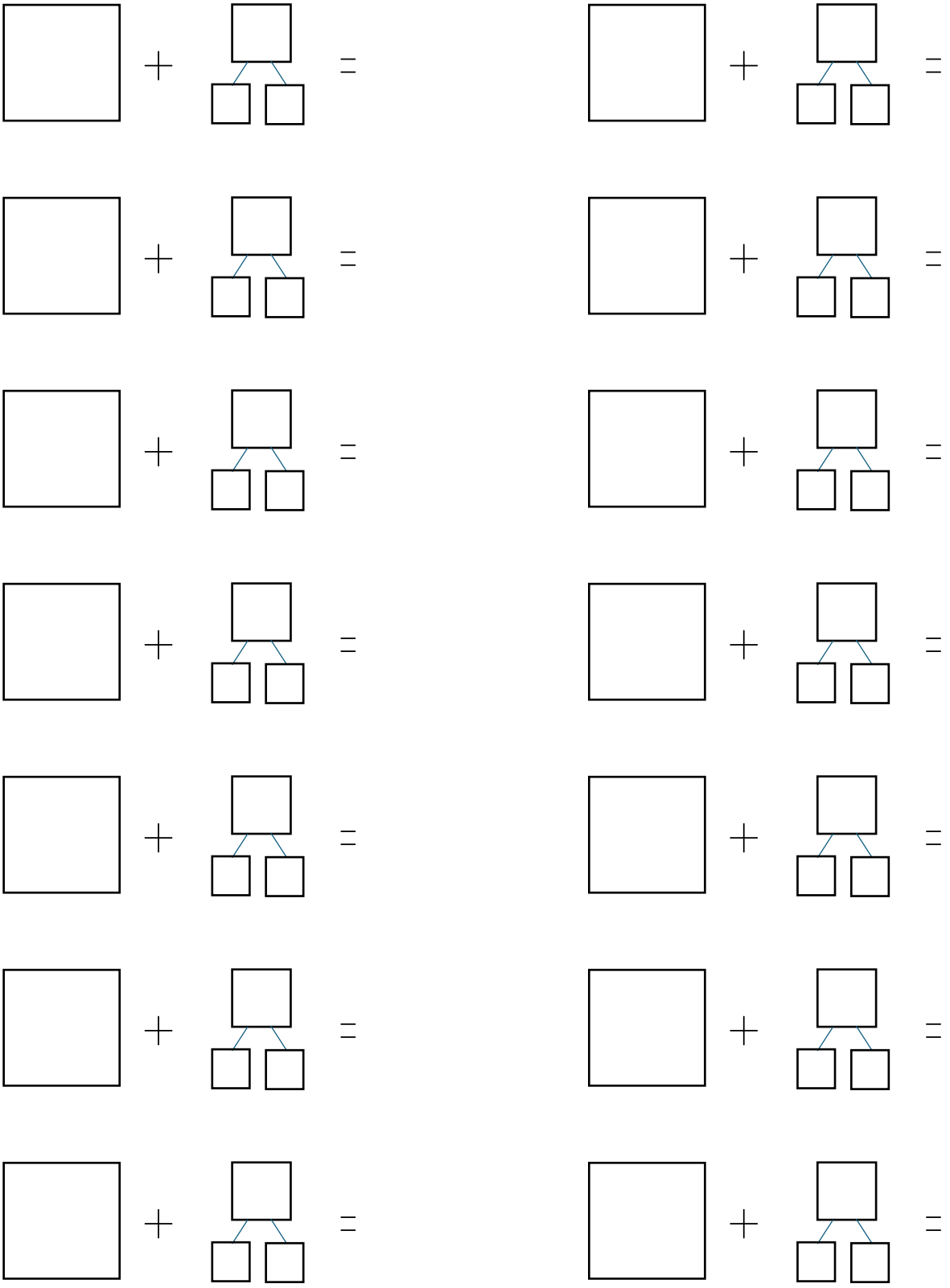
“7 and 3 is 10, and 1 more is 11.”



“8 and 2 is 10, and 1 more is 11.”

Create one side of a deck of cards with 7-9, and another side with 3-5. Remove 1, 2, 10 and all picture cards. Keep sides separate, turn over one from each pile and add together.

Think build/bridge to 10



PB:

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

d = double fact

nd = near double fact

bt10 = build/bridge to 10

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

d = double fact

nd = near double fact

bt10 = build/bridge to 10

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

d = double fact

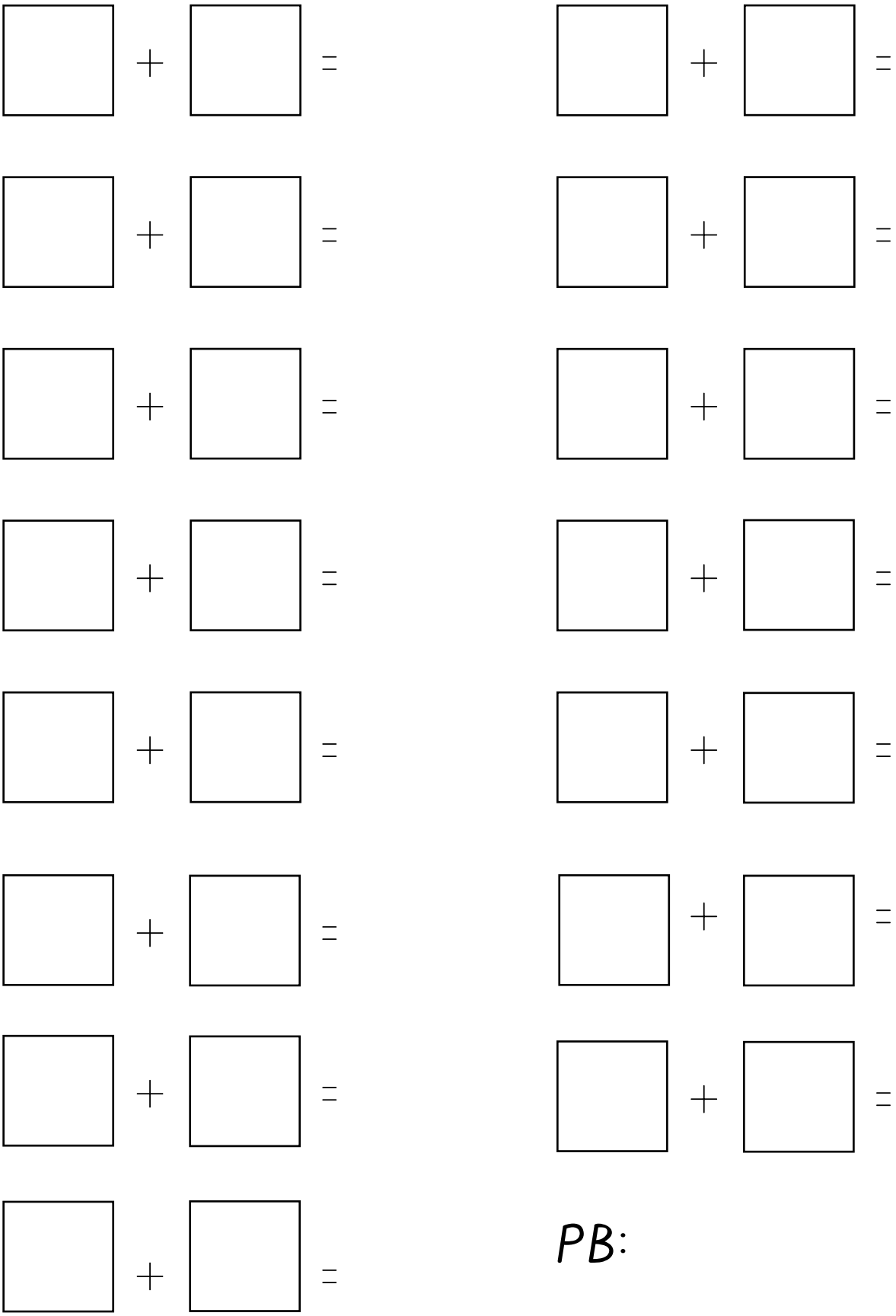
nd = near double fact

bt10 = build/bridge to 10

Pull two playing cards (1-10, remove picture cards) and add them together.

Think about all the ways to make/ninja sliders. 10 facts. doubles. near doubles and build to 10.

Code your strategy (n = ninja ways to make 10f = 10 fact d = double nd = near double bt10 = build to 10)



PB:

Use a deck of cards (remove 10 and picture cards).
Pull two cards to make a two-digit number. Add ten to that number.

Think one ten more (the ones don't change).

☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	☐ + 10 =
☐ + 1 ten =	PB:

Use a deck of cards (remove 10 and picture cards). Pull two cards to make a two-digit number. Subtract ten from that number.

Think one ten less (the ones don't change).

☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	☐	- 10 =
☐	- 1 ten =	PB:	

Use a deck of cards (remove 10 and picture cards).
Pull two cards to make a two-digit number. Add 2 tens to that number.

Think two tens more (the ones don't change).

☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	☐ + 20 =
☐ + 2 tens =	PB:

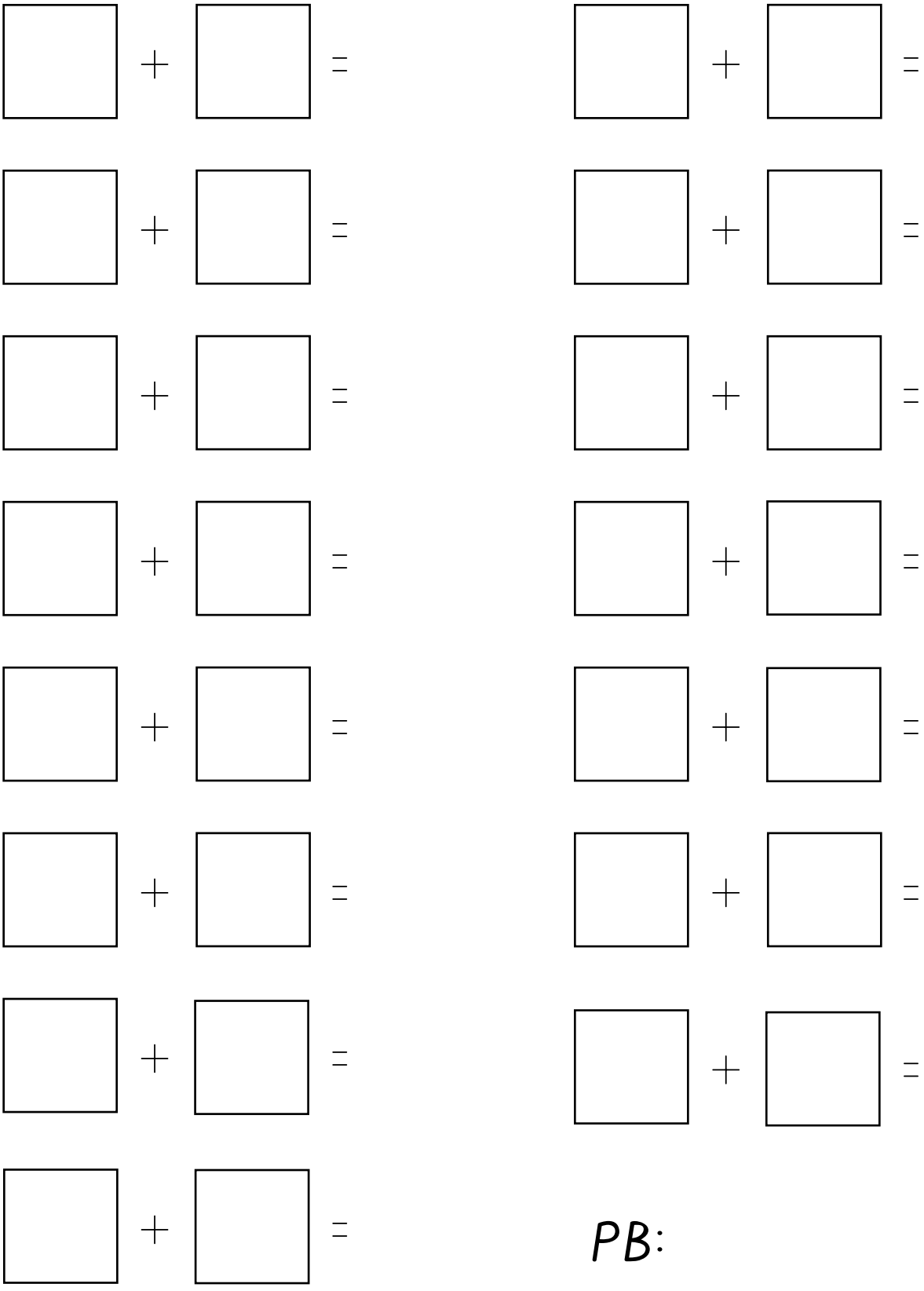
Use a deck of cards (remove 10 and picture cards). Pull two cards to make a two-digit number. Subtract 2 tens from that number.

Think two tens less (the ones don't change).

☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	☐	- 20 =
☐	- 2 tens =	PB:	

Roll two tens dice (place value dice that show tens such as 10, 20, 30, up to 90). Add the two tens numbers together.

Connect this to all the strategies and facts you know for single-digit addition.



PB:

Roll two tens dice (place value dice that show tens such as 10, 20, 30, up to 90). Keep the larger number on the left. Work out the difference.

Connect this to all the strategies and facts you know for single-digit subtraction.

☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		☐	− ☐ =	
☐	− ☐ =		PB:		

Roll one 20-sided die. Double the number and write the total.

Think about doubling the tens, then the ones, then putting that together.

	+	same number	=		× 2	=	
	+	same number	=		× 2	=	
	+	same number	=		× 2	=	
	+	same number	=		× 2	=	
	+	same number	=		× 2	=	
	+	same number	=		× 2	=	
	+	same number	=	*PB*:			

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

d = double fact

nd = near double fact

bt10 = build/bridge to 10

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

d = double fact

nd = near double fact

bt10 = build/bridge to 10

Addition strategy codes

n = ninja ways to make

10 f = 10 fact

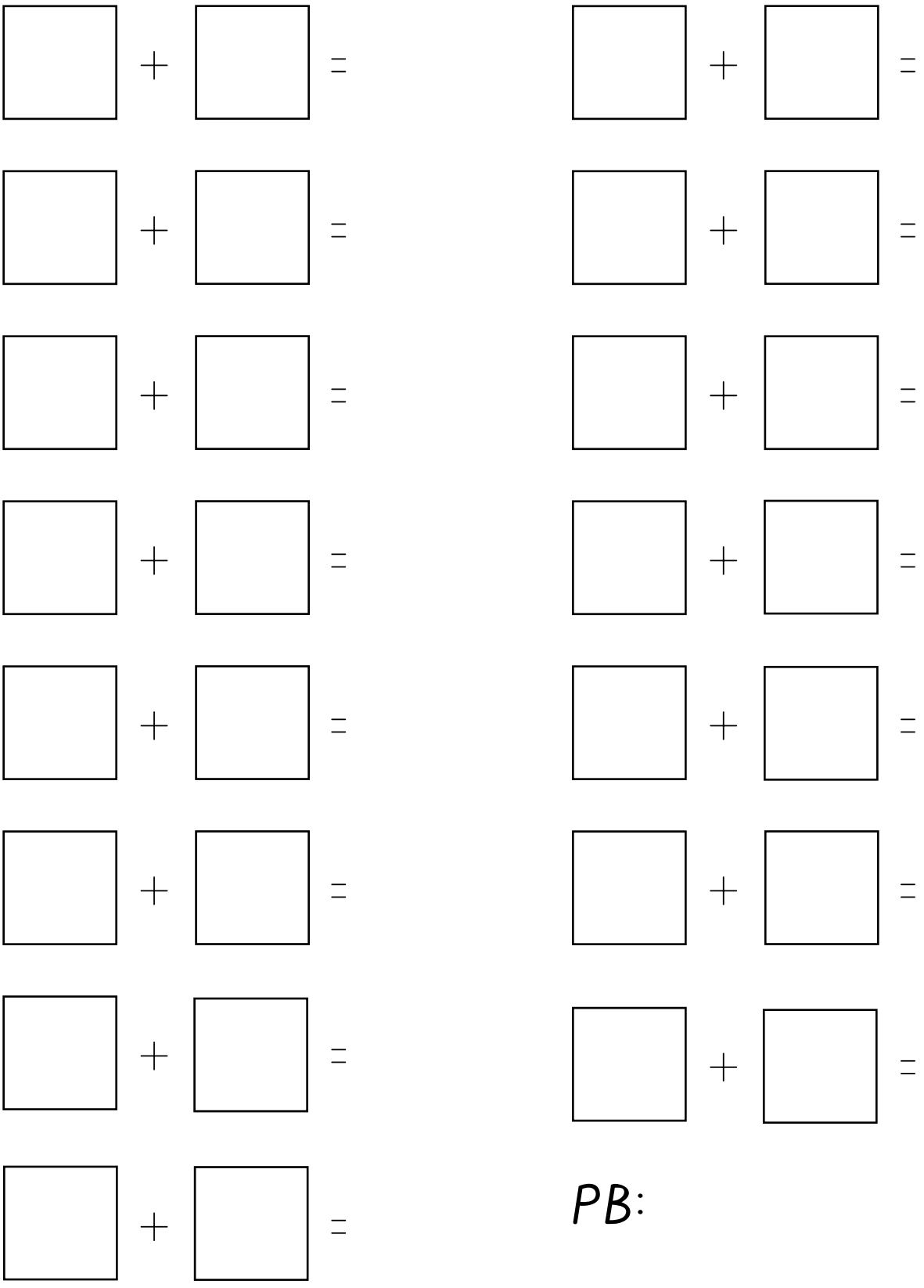
d = double fact

nd = near double fact

bt10 = build/bridge to 10

Roll two 20-sided dice. Add using your addition strategies (ways to make ninjas, 10 facts, doubles, near doubles, build to 10).

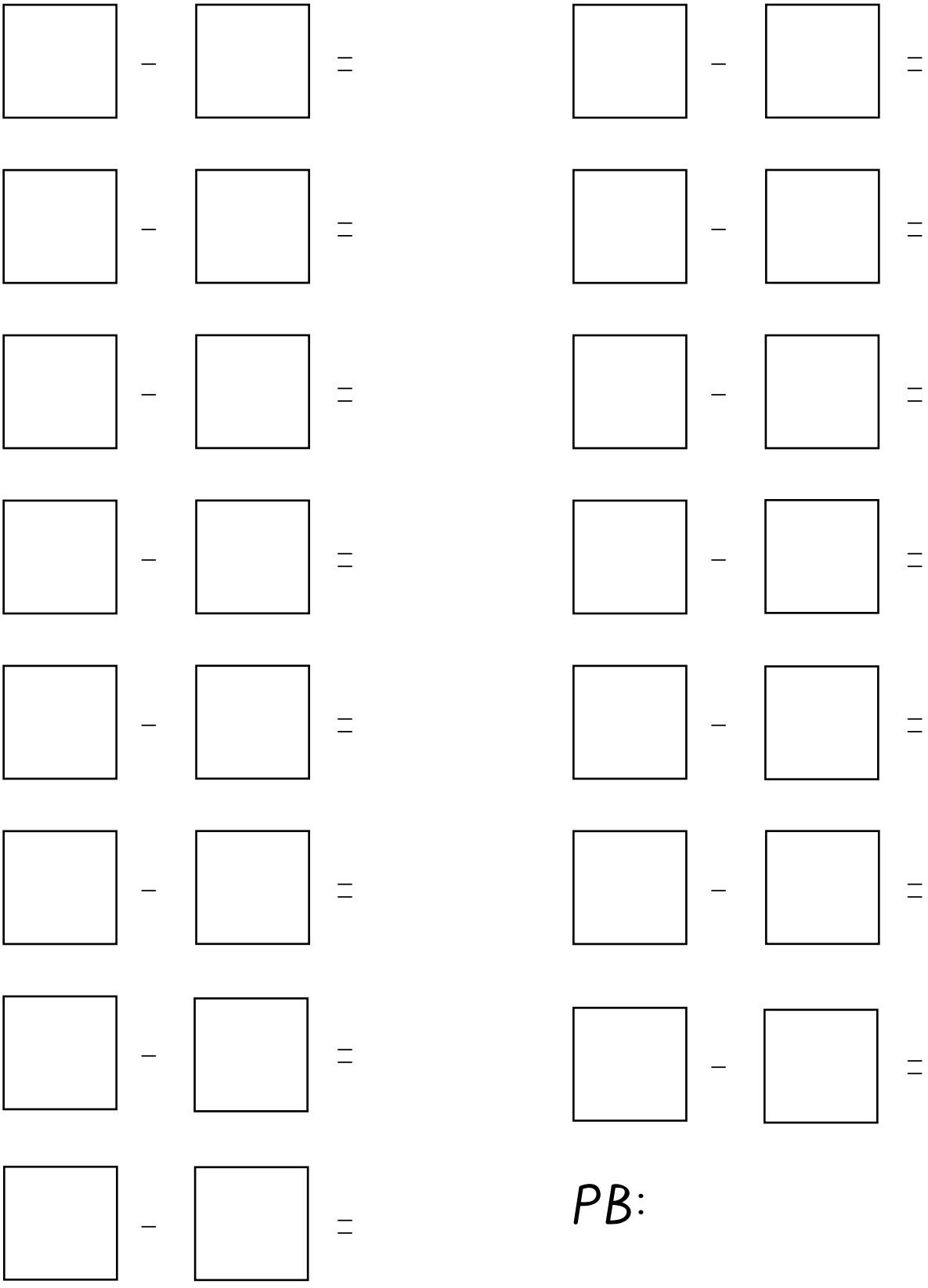
Code your strategies (nd = near double bt10 = build to 10)



PB:

Roll two 20-sided dice. Subtract the smaller from the larger using mental strategies. Keep the larger number on the left side.

Think about reversing the addition strategies you know.



PB:

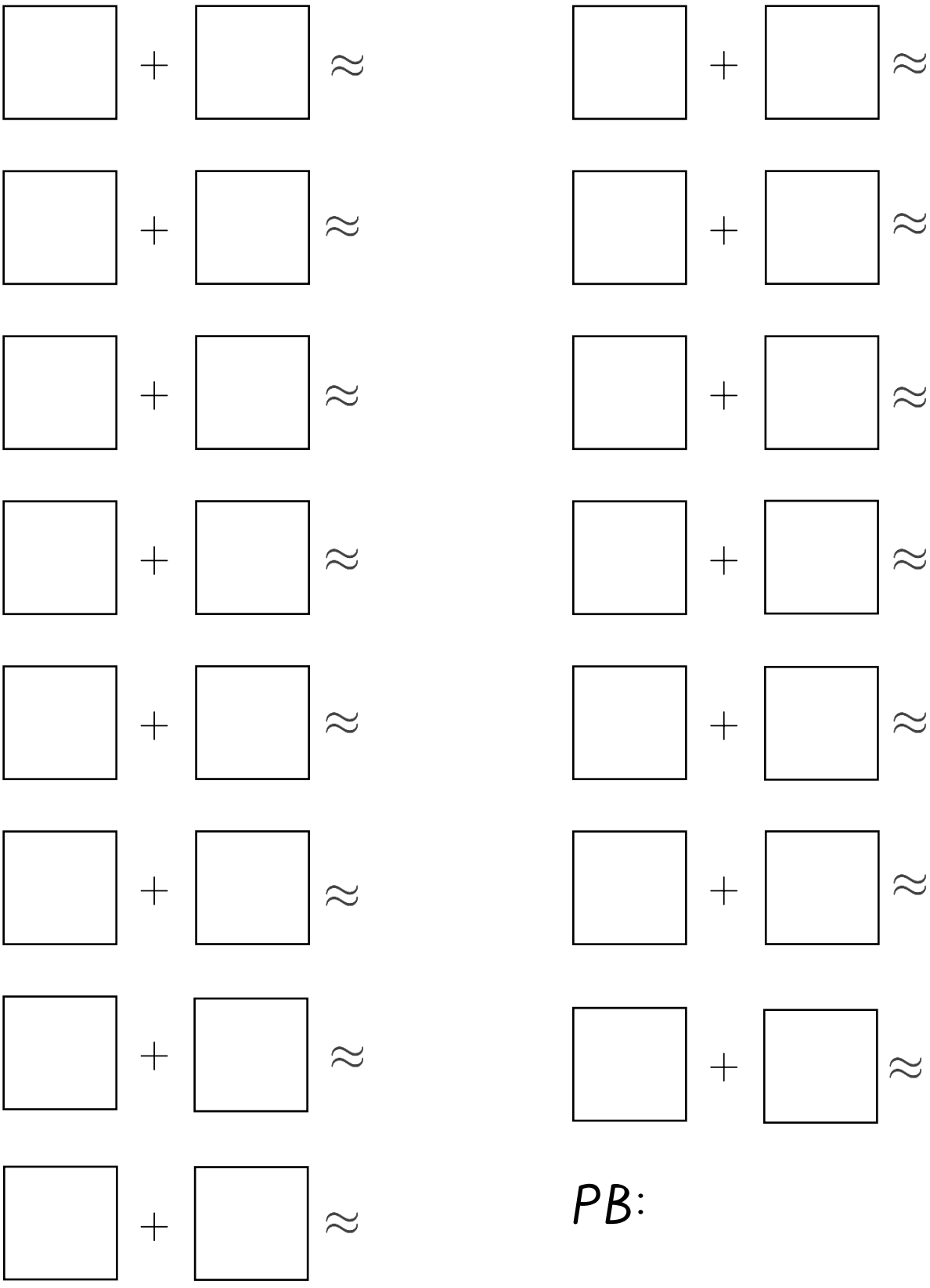
Pull two cards from a deck (remove 10 and all picture cards) to make a two-digit number. Double the number and write the total.

Think about doubling the tens, then the ones, then putting that together.

	+		(same number) =		× 2 =
	+		(same number) =		× 2 =
	+		(same number) =		× 2 =
	+		(same number) =		× 2 =
	+		(same number) =		× 2 =
	+		(same number) =		× 2 =
	+		(same number) =	*PB:*	

Pull 4 playing cards (remove 10 and picture cards) to make two 2-digit numbers. Estimate the total roughly (do not answer).

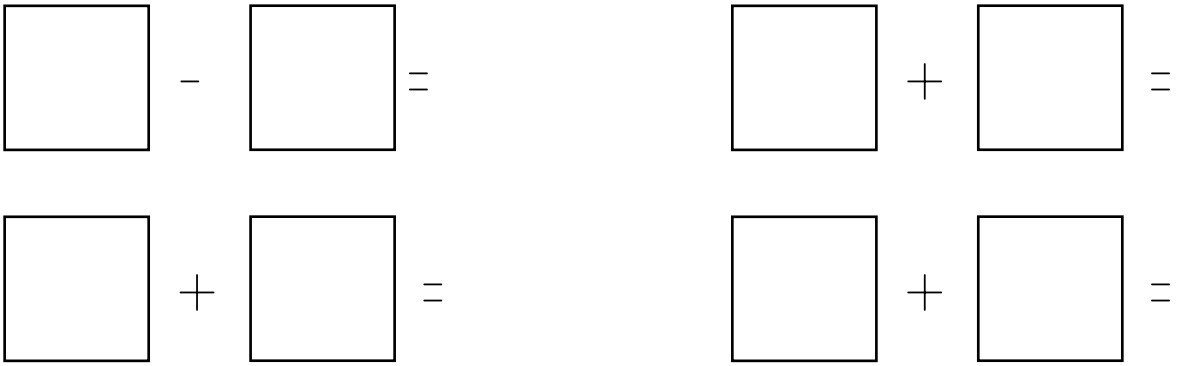
Estimation needs to be quick and rounded (not exact answers).



PB:

Pull 4 playing cards (remove 10 and picture cards) to make two 2-digit numbers. Add mentally (not vertically).

Think split strategy, jump strategy and switch strategy.



PB:

Pull 4 playing cards (remove 10 and picture cards) to make two 2-digit numbers. Keep the larger number is on the left.

Estimate the difference roughly (do not answer).

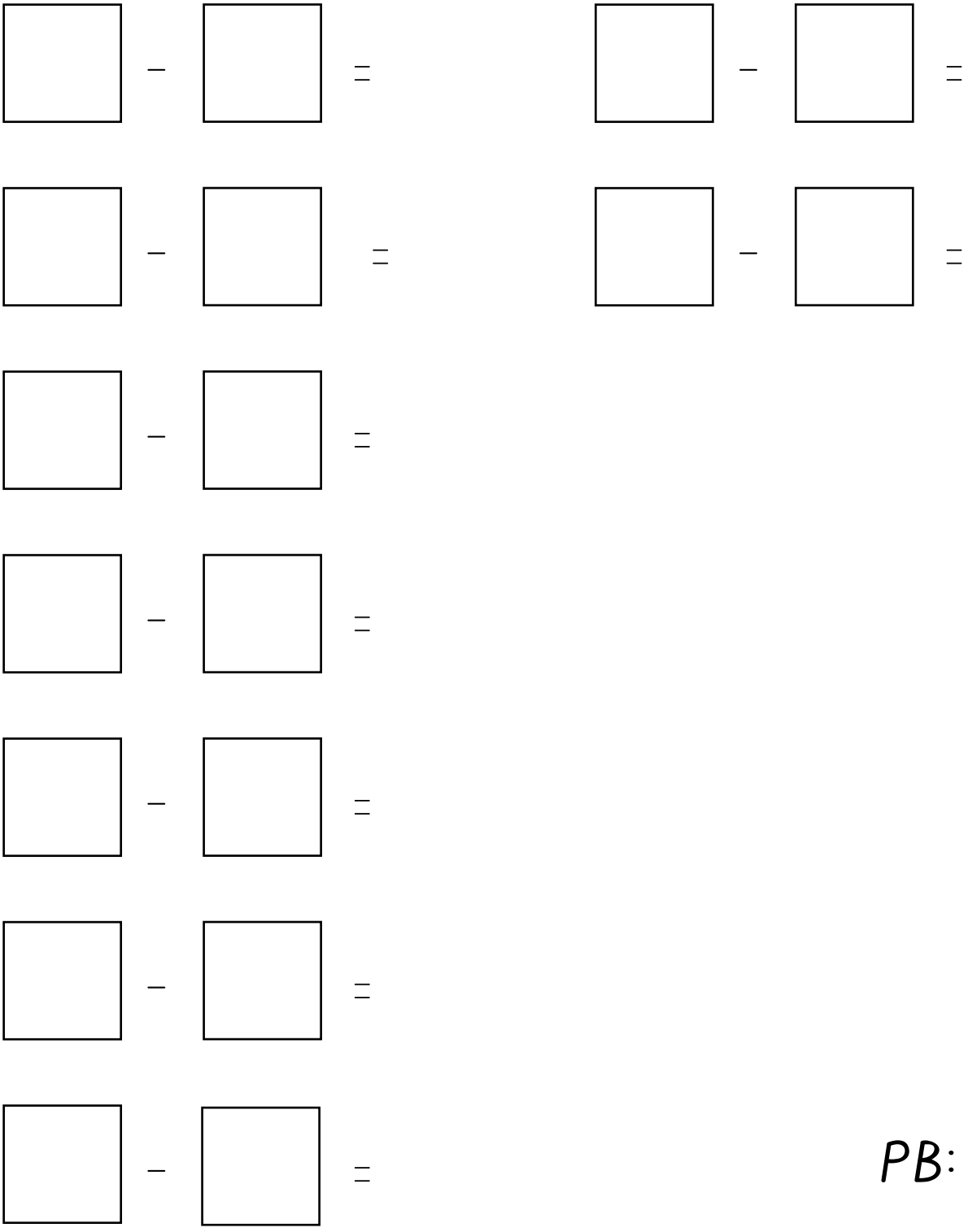
Estimation needs to be quick and rounded (not exact answers).

☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	☐	– ☐	≈
☐	– ☐	≈	*PB*:		

Pull 4 playing cards (remove 10 and picture cards) to make two 2-digit numbers. Keep the larger number is on the left.

Work out the difference mentally (not vertically).

Think jump back, jump the gap, transformation (pump it up or drop it low) mental strategies.



PB:

Skip-count by 4 from zero.

0	4	8		

Skip-count by 3 from zero.

0	3	6							

Pull two playing cards (10 and picture cards removed) to make three different two-digit starting numbers.

extra challenge option: Create a three-digit starting number.

starting number

Skip-count on by 9 (think add 10, take away 1):

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

different
starting number

Skip-count on by 8 (think add 10, take away 2):

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

different
starting number

Skip-count on by 7 (think add 10, take away 3):

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

Multiplicative Strategies

strategy codes

Doubling family

x2 think double ***d***

2 x 8 = think double 8 = 16

x4 think double double

dd

4 x 7 = think double double 7
double 7 is 14, double 14 is 28
d7 = 14, dd = 28

x8 think double double double

ddd

8 x 6 = think double double double
double 6 is 12, double double is 24,
double double double is 48 ddd6 = 48

Tens family

x10 think place value pattern (one place value higher) ***pv***

5 x 10 = 50 because it is now 5 tens instead of 5 ones, as it increases in size by 10

x9 think x10 – group, check digits = 9 ***pv – g***

9 x 7 = think 7 tens is 70, take away 7 to make it 9 sevens instead of 10 sevens
so 70 – 7 = 63, check that '6' and '3' is 9 – correct!

x5 think x10 half ***pv ½***

5 x 6 = think 6 tens halved, so 60 halved is 30

Threes

x7

You only need to memorise 7x7=49 and you have all the other strategies already!

x3 think double + group ***d + g***

3 x 6 = think double 6 + one more 6, so 12 + 6 = 18

x6 think x3 double it, or 5x + group ***x3d***

6 x 7 = think x3, so 3 x 7 = 21, double it to make it 6x7, so 42

Pull a card from a deck (remove all picture cards).
Multiply that number by 4.

Think double double (dd)

4 groups of ☐ =	☐ ×4 =
4 groups of ☐ =	☐ ×4 =
4 groups of ☐ =	☐ ×4 =
4 groups of ☐ =	4 × ☐ =
4 groups of ☐ =	4 × ☐ =
4 groups of ☐ =	4 × ☐ =
4 groups of ☐ =	4 × ☐ =
4 groups of ☐ =	PB:

Pull a card from a deck (remove picture cards). Multiply by 3.

Think double plus a group (d + g)

3 groups of ☐ = ☐ × 3 =

3 groups of ☐ = ☐ × 3 =

3 groups of ☐ = ☐ × 3 =

3 groups of ☐ = 3 × ☐ =

3 groups of ☐ = 3 × ☐ =

3 groups of ☐ = 3 × ☐ =

3 groups of ☐ = 3 × ☐ =

3 groups of ☐ = PB:

Pull a card from a deck (remove picture cards). Multiply by 10.

Think in **tens** (4 × 10 = 4 tens = 40) and that each digit shifts higher by one place value (pv)

10 groups of ☐ = ☐ × 10 =

10 groups of ☐ = ☐ × 10 =

10 groups of ☐ = ☐ × 10 =

10 groups of ☐ = ☐ × 10 =

10 groups of ☐ = 10 × ☐ =

10 groups of ☐ = 10 × ☐ =

10 groups of ☐ = 10 × ☐ =

10 groups of ☐ = PB:

Pull a card from a deck (remove picture cards). Multiply by 5.

Think in **tens** then halve it to make it fives (pv $\frac{1}{2}$)

5 groups of ☐ = ☐ × 5 =

5 groups of ☐ = ☐ × 5 =

5 groups of ☐ = ☐ × 5 =

5 groups of ☐ = 5 × ☐ =

5 groups of ☐ = 5 × ☐ =

5 groups of ☐ = 5 × ☐ =

5 groups of ☐ = 5 × ☐ =

5 groups of ☐ = PB:

Pull a card from a deck (remove picture cards). Multiply by 9.

Think in **tens** then take away one group (nv − g)

9 groups of ☐ = ☐ × 9 =

9 groups of ☐ = ☐ × 9 =

9 groups of ☐ = ☐ × 9 =

9 groups of ☐ = 9 × ☐ =

9 groups of ☐ = 9 × ☐ =

9 groups of ☐ = 9 × ☐ =

9 groups of ☐ = 9 × ☐ =

9 groups of ☐ = PB:

Pull a card from a deck (remove all picture cards).

Multiply by 8.

Think **double double double** (ddd)

8 groups of ☐ = ☐ × 8 =

8 groups of ☐ = ☐ × 8 =

8 groups of ☐ = ☐ × 8 =

8 groups of ☐ = 8 × ☐ =

8 groups of ☐ = 8 × ☐ =

8 groups of ☐ = 8 × ☐ =

8 groups of ☐ = 8 × ☐ =

8 groups of ☐ = PB:

Pull a card from a deck (remove picture cards). Multiply by 6.

Think ×3 double it, or ×5 + group, or d + d + d

6 groups of ☐ =	☐ × 6 =
6 groups of ☐ =	☐ × 6 =
6 groups of ☐ =	☐ × 6 =
6 groups of ☐ =	6 × ☐ =
6 groups of ☐ =	6 × ☐ =
6 groups of ☐ =	6 × ☐ =
6 groups of ☐ =	6 × ☐ =
6 groups of ☐ =	PB:

Pull a card from a deck (remove picture cards). Multiply by 7.

Use all multiplicative strategies so far so you only need to learn 7 × 7

7 groups of ☐ = ☐ × 7 =

7 groups of ☐ = ☐ × 7 =

7 groups of ☐ = ☐ × 7 =

7 groups of ☐ = 7 × ☐ =

7 groups of ☐ = 7 × ☐ =

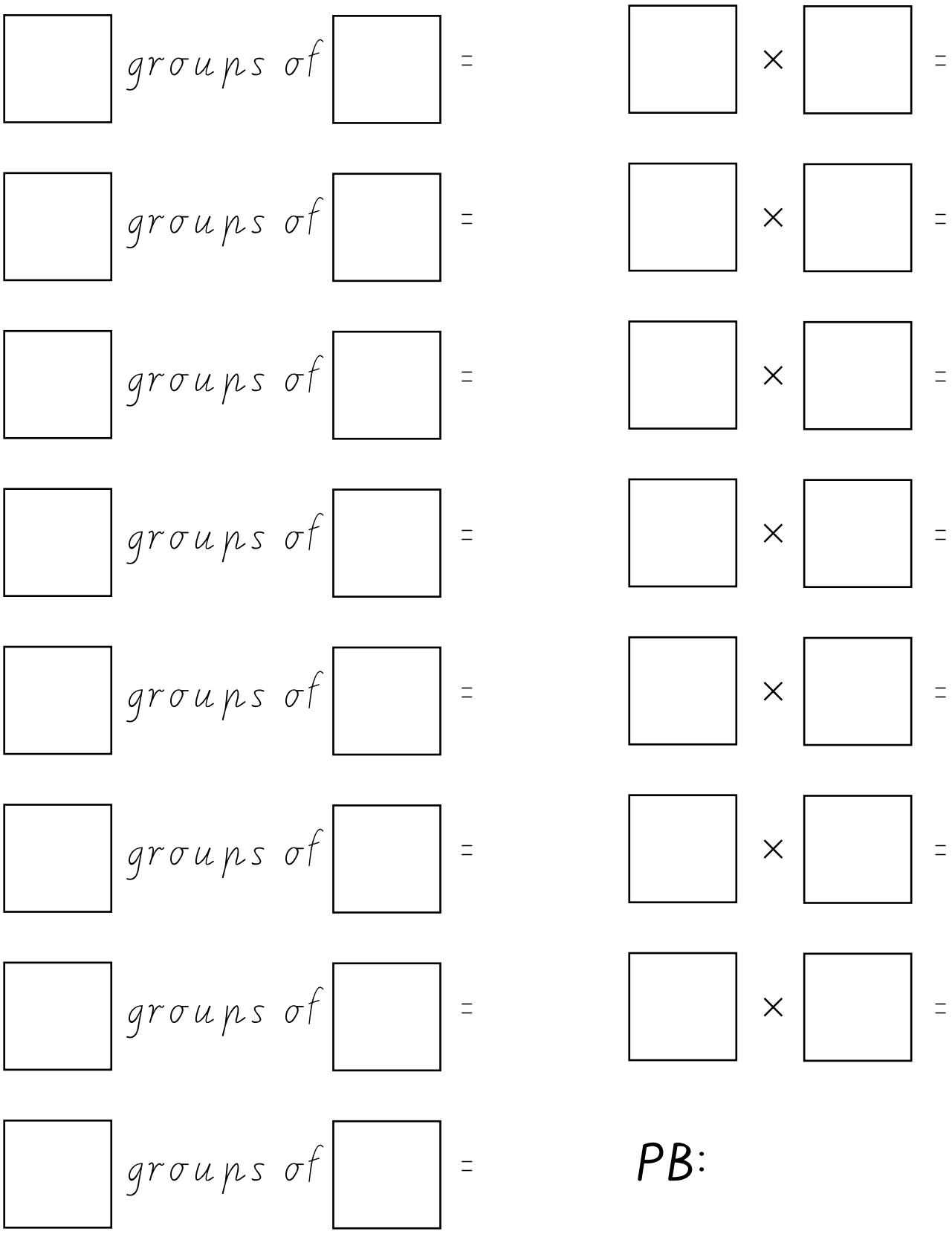
7 groups of ☐ = 7 × ☐ =

7 groups of ☐ = 7 × ☐ =

7 groups of ☐ = PB:

Pull two cards from the deck (remove picture cards).
Multiply together using all multiplicative strategies.

Think back to all multiplicative strategies



Pull cards to fill the first row and first column of this grid (remove picture cards). Multiply the numbers together.
Fill the grid with the answers within 5 minutes.

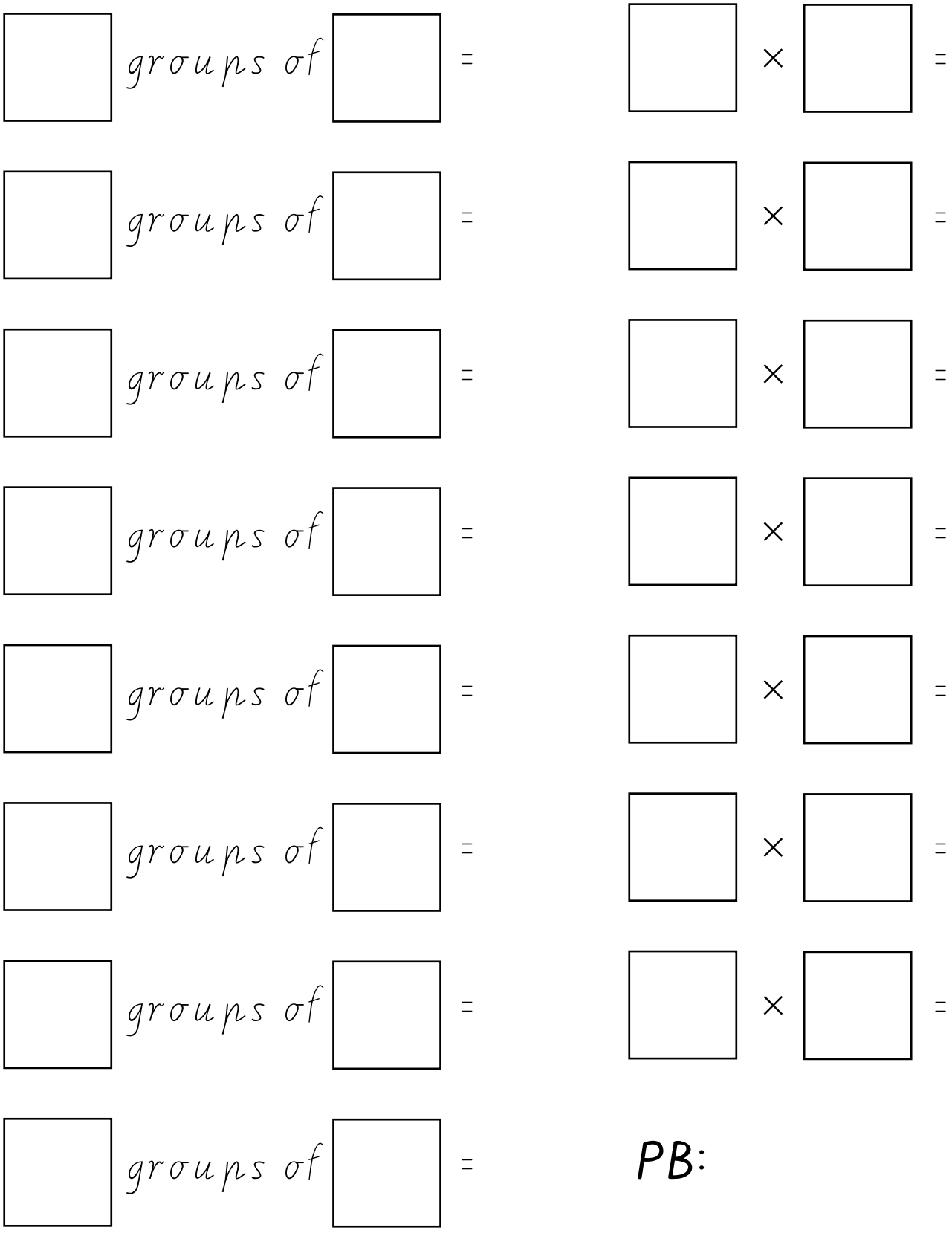
×										

Score out of 100: _____ 100 0.__ __ __%

PB:

Roll a 10-sided die and a 20-sided die.
Multiply together using all multiplicative strategies.

Think back to all multiplicative strategies



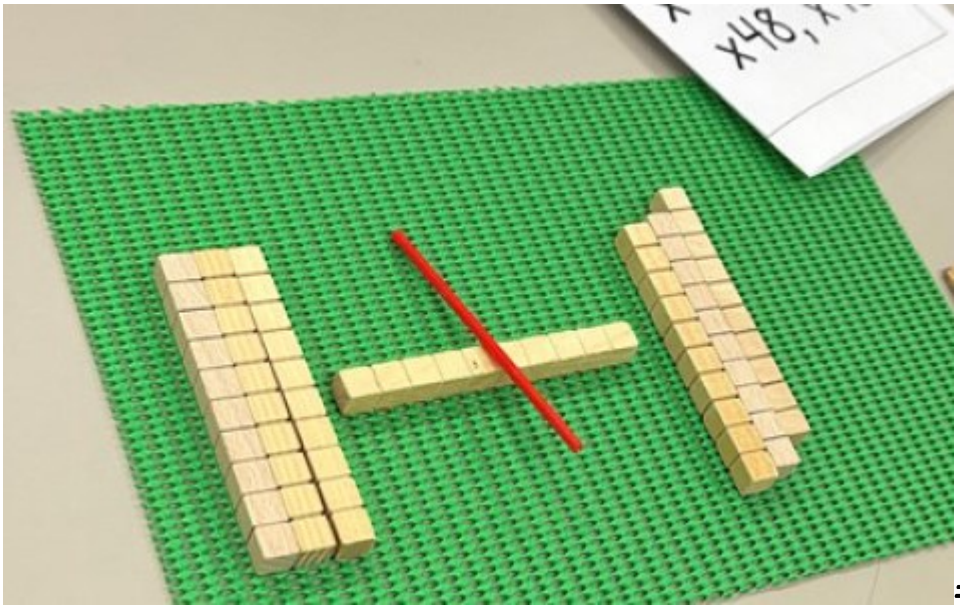
Initial practice:

Halve the numbers on the playing cards using partitioning sticks:

You can see 4 and a half on each side.

Initial practice:

For example, for halving 70, split the tens between two sides (60 becomes 30 and 30). For the extra ten, split it into 5 and 5.



= 35

Pull a card from a deck (remove all picture cards).
Halve that number.

Think the opposite of doubling. For odd numbers think half of the even number one less than it, then halve the extra one.

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

PB:

Roll a tens place value die (die that shows 10, 20, 30 up to 90). Halve that number.

Think the opposite of doubling. What and what makes that number? For numbers like 90 think half of 80, then half of the extra ten.

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

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$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

PB:

Pull two cards from a deck (remove 10 and all picture cards) to form a two-digit number. Halve that number to divide/share it between 2.

Think **half** to divide by 2 (share between 2)

☐ shared between 2 =	☐ ÷ 2 =
☐ shared between 2 =	☐ ÷ 2 =
☐ shared between 2 =	☐ ÷ 2 =
☐ shared between 2 =	☐ ÷ 2 =
$\frac{1}{2}$ of ☐ =	☐ ÷ 2 =
$\frac{1}{2}$ of ☐ =	☐ ÷ 2 =
50% of ☐ =	☐ ÷ 2 =
50% of ☐ =	PB:

Post-it note cups for the following skills

Create post-it note cups (a cup filled with post-it notes or the labels below scrunched up) that contain all the multiples of that family. This ensures students can divide without remainders during the following skills, using the inverse of the multiplicative strategy or multiplication fact family.

Slice, scrunch up and fill a cup with these for *dividing by 4:*

4	8	12	16
20	24	28	32
36	40	80	100

Slice, scrunch up and fill a cup with these for *dividing by 8:*

8	16	24	32
40	48	56	64
72	80	160	200

Slice, scrunch up and fill a cup with these for *dividing by 10:*

10	20	30	40
50	60	70	80
90	100	200	1000

Slice, scrunch up and fill a cup with these for *dividing by 5:*

5	10	15	20
25	30	35	40
45	50	100	1000

Slice, scrunch up and fill a cup with these for *dividing by 3:*

3	6	9	12
15	18	21	24
27	30	300	900

Slice, scrunch up and fill a cup with these for *dividing by 6:*

6	12	18	24
30	36	42	48
54	60	600	1200

Slice, scrunch up and fill a cup with these for *dividing by 9:*

9	18	27	36
45	54	63	72
81	90	180	900

Slice, scrunch up and fill a cup with these for *dividing by 7:*

7	14	21	28
35	42	49	56
63	70	140	700

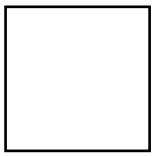
Create a post-it note cup with scrunched up notes that show a multiple of 4. Pull a post-it note from the cup and divide it by 4.

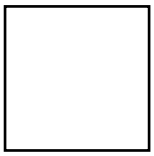
Halve it and halve it again (half of half)

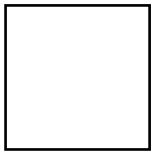
☐ shared between 4 =	☐ ÷4 =
☐ shared between 4 =	☐ ÷4 =
☐ shared between 4 =	☐ ÷4 =
☐ shared between 4 =	☐ ÷4 =
$\frac{1}{4}$ of ☐ =	☐ ÷4 =
$\frac{1}{4}$ of ☐ =	☐ ÷4 =
25% of ☐ =	☐ ÷4 =
25% of ☐ =	PB:

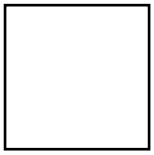
Create a post-it note cup with scrunched up notes that show a multiple of 8. Pull a post-it note from the cup and divide it by 8.

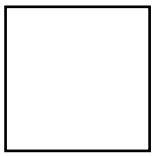
Halve it, halve it, and halve it again (half half half)

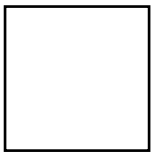
 shared between 8 =

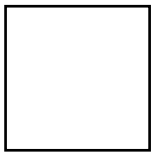
 ÷ 8 =

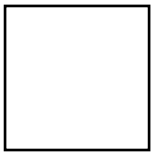
 shared between 8 =

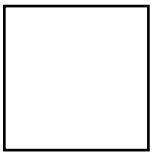
 ÷ 8 =

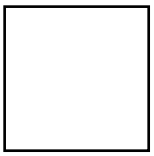
 shared between 8 =

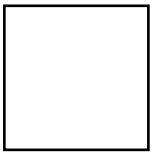
 ÷ 8 =

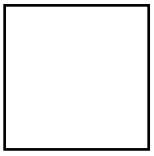
 shared between 8 =

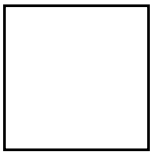
 ÷ 8 =

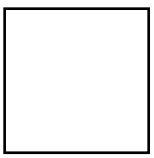
$\frac{1}{8}$ of  =

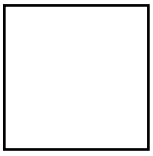
 ÷ 8 =

$\frac{1}{8}$ of  =

 ÷ 8 =

12.5% of  =

 ÷ 8 =

12.5% of  =

PB:

Create a post-it note cup with scrunched up notes that show a multiple of 10. Pull a post-it note from the cup and divide it by 10.

Think one place value less

☐ shared between 10 =	☐ ÷ 10 =
☐ shared between 10 =	☐ ÷ 10 =
☐ shared between 10 =	☐ ÷ 10 =
☐ shared between 10 =	☐ ÷ 10 =
$\frac{1}{10}$ of ☐ =	☐ ÷ 10 =
$\frac{1}{10}$ of ☐ =	☐ ÷ 10 =
10% of ☐ =	☐ ÷ 10 =
10% of ☐ =	PB:

Create a post-it note cup with scrunched up notes that show a multiple of 5. Pull a post-it note from the cup and divide it by 5.

Divide by 10 (shifts one place value less) then double it

☐ shared between 5 =	☐ ÷ 5 =
☐ shared between 5 =	☐ ÷ 5 =
☐ shared between 5 =	☐ ÷ 5 =
☐ shared between 5 =	☐ ÷ 5 =
$\frac{1}{5}$ of ☐ =	☐ ÷ 5 =
$\frac{1}{5}$ of ☐ =	☐ ÷ 5 =
20% of ☐ =	☐ ÷ 5 =
20% of ☐ =	PB:

Create a post-it note cup with scrunched up notes that show a multiple of 3. Pull a post-it note from the cup and divide it by 3.

Use the multiplication fact family

□ shared between 3 = □ ÷ 3 =

□ shared between 3 = □ ÷ 3 =

□ shared between 3 = □ ÷ 3 =

□ shared between 3 = □ ÷ 3 =

$\frac{1}{3}$ of □ = □ ÷ 3 =

$\frac{1}{3}$ of □ = □ ÷ 3 =

$33.3\overline{3}\%$ of □ = □ ÷ 3 =

$33.3\overline{3}\%$ of □ = PB:

Create a post-it note cup with scrunched up notes that show a multiple of 6. Pull a post-it note from the cup and divide it by 6.

Use the multiplication fact family

□ shared between 6 = □ ÷ 6 =

□ shared between 6 = □ ÷ 6 =

□ shared between 6 = □ ÷ 6 =

□ shared between 6 = □ ÷ 6 =

$\frac{1}{6}$ of □ = □ ÷ 6 =

$\frac{1}{6}$ of □ = □ ÷ 6 =

$16.6\overline{6}\%$ of □ = □ ÷ 6 =

$16.6\overline{6}\%$ of □ = PB:

Create a post-it note cup with scrunched up notes that show a multiple of 9. Pull a post-it note from the cup and divide it by 9.

Use the multiplication fact family

□ shared between 9 = □ ÷ 9 =

□ shared between 9 = □ ÷ 9 =

□ shared between 9 = □ ÷ 9 =

□ shared between 9 = □ ÷ 9 =

$\frac{1}{9}$ of □ = □ ÷ 9 =

$\frac{1}{9}$ of □ = □ ÷ 9 =

$11.\overline{1}\%$ of □ = □ ÷ 9 =

$11.\overline{1}\%$ of □ = PB:

Create a post-it note cup with scrunched up notes that show a multiple of 7. Pull a post-it note from the cup and divide it by 7.

Use the multiplication fact family

□ shared between 7 = □ ÷ 7 =

□ shared between 7 = □ ÷ 7 =

□ shared between 7 = □ ÷ 7 =

□ shared between 7 = □ ÷ 7 =

$\frac{1}{7}$ of □ = □ ÷ 7 =

$\frac{1}{7}$ of □ = □ ÷ 7 =

14.29% of □ = □ ÷ 7 =

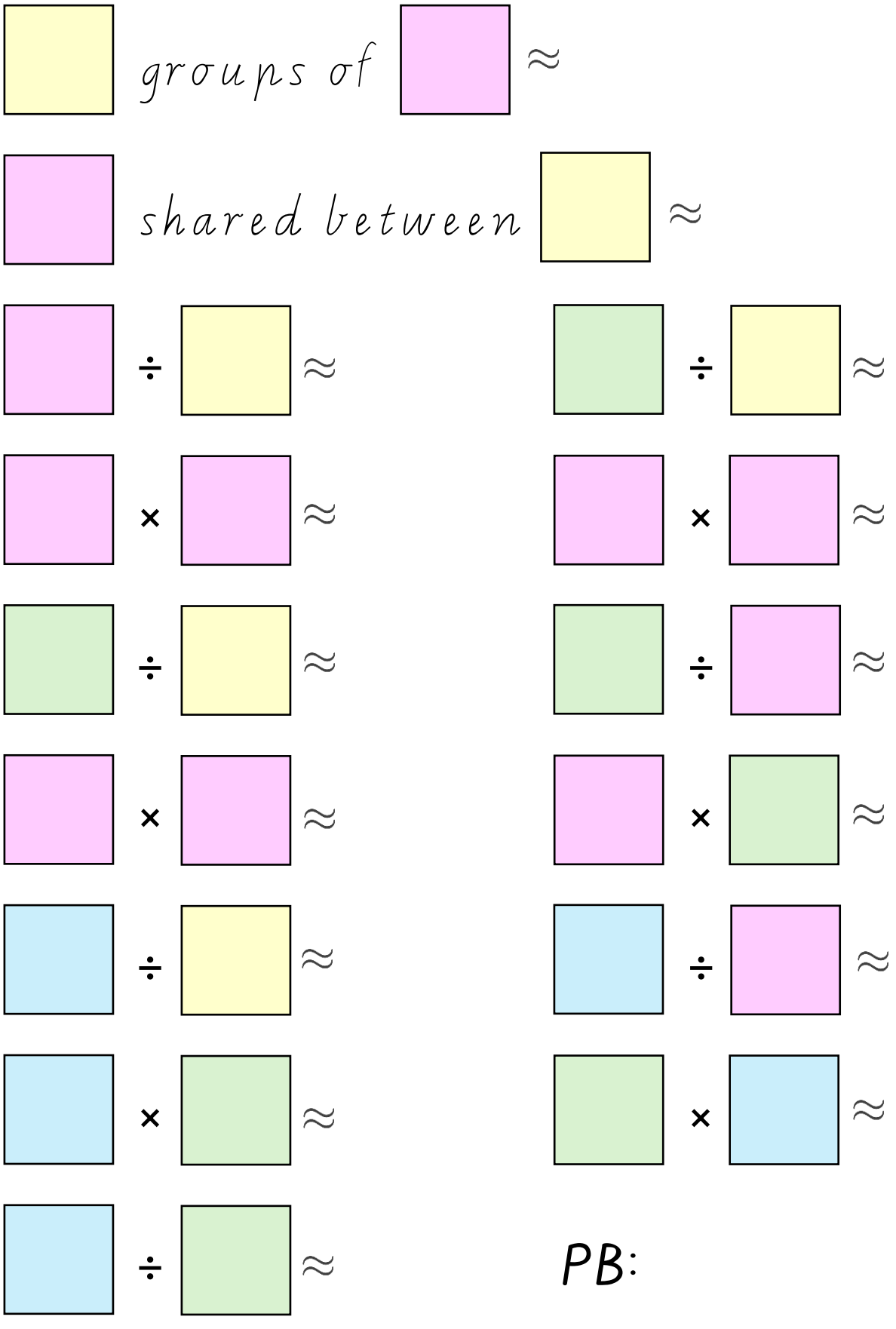
14.29% of □ = PB:

Pull two playing cards (remove 10 and picture cards) to form a two-digit number. Roll a 10-sided die to divide it by the rolled number.

Use the multiplication fact family and adjust for remainders

☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	☐ ÷ ☐ =
☐ ÷ ☐ =	*PB*:

Pull cards (remove 10 and picture cards) to fill the blanks with 1-digit numbers for yellow boxes, 2-digit numbers for pink boxes, 3-digit numbers for green, 4-digit for blue. Estimate only (do not answer precisely).



Pull cards (remove 10 and picture cards) to fill the blanks.

Multiplying by powers of 10 shifts the place values higher.
Dividing by powers of 10 shifts the place values lower.

0.__ __ × 10 =

0.__ × 100 =

0.__ __ × 10 =

0.__ __ × 100 =

__.__ × 1000 =

__.__ __ × 1000 =

__.__ × 1000 =

__ __.__ × 10 =

__.__ ÷ 10 =

__ __ ÷ 100 =

__ .__ __ ÷ 100 =

__ .__ ÷ 100 =

0.__ __ ÷ 10 =

0.__ ÷ 100 =

__ __ __ __ __ ÷ 1000 =

PB:

Pull two cards from a deck (remove 10 and picture cards) to form a two-digit number. Work out 50% of that number.

extra challenge option: three-digit number.

Think half (share between 2).

50% of ☐ =

50% of ☐ =

50% of ☐ =

0.5 × ☐ =

0.5 × ☐ =

0.50 × ☐ =

0.50 × ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ of ☐ =

$\frac{1}{2}$ × ☐ =

$\frac{1}{2}$ × ☐ =

$\frac{1}{2}$ × ☐ =

$\frac{1}{2}$ × ☐ =

☐ ÷ 2 =

PB:

Pull two cards from a deck (remove 10 and picture cards) to form a two-digit number. Work out 25% of that number.

extra challenge option: three-digit number.

Think share between 4 (half of half).

25% of ☐ =	$\frac{1}{4}$ of ☐ =
25% of ☐ =	$\frac{1}{4}$ of ☐ =
25% of ☐ =	$\frac{1}{4}$ of ☐ =
0.5 × ☐ =	$\frac{1}{4}$ × ☐ =
0.25 × ☐ =	$\frac{1}{4}$ × ☐ =
0.25 × ☐ =	$\frac{1}{4}$ × ☐ =
0.25 × ☐ =	$\frac{1}{4}$ × ☐ =

☐ ÷4 =

PB:

Pull two cards from a deck (remove 10 and picture cards) to <u>form a two-digit number</u>. Work out 10% of that number.

extra challenge option: three-digit number.

Think power of 10 place value shift.

10% of ☐ =

10% of ☐ =

10% of ☐ =

0.1 × ☐ =

0.1 × ☐ =

0.10 × ☐ =

0.10 × ☐ =

☐ ÷ 10 =

$\frac{1}{10}$ of ☐ =

$\frac{1}{10}$ of ☐ =

$\frac{1}{10}$ of ☐ =

$\frac{1}{10}$ × ☐ =

$\frac{1}{10}$ × ☐ =

$\frac{1}{10}$ × ☐ =

$\frac{1}{10}$ × ☐ =

PB: